

$$(x-1)(x+4) = x^2 + \underline{4x} - \underline{x} - 4 = x^2 + 3x - 4$$

$$(x-1)(x+4)(x-3) = (x^2 + 3x - 4)(x-3)$$

$$x^3 - \cancel{3x^2} + \cancel{3x^2} - \underline{9x} - \underline{4x} + 12$$

$$x^3 - 13x + 12$$

$$\underline{x^2 - 16x + 64} = (x - 8)(x - 8)$$

$$(-8)(-8) = \underline{64}$$

$$-8 + -8 = \underline{-16}$$

$$x^3 - 16x^2 + 64x = x(x^2 - 16x + 64)$$

$$\underline{x} \underline{x} \underline{x} - 16 \underline{x} \underline{x} + 64 \underline{x} = x(x^2 - 16x + 64) = \\ = x(x - 8)(x - 8)$$

FACTOR IN PAIRS

$$x^3 + 6x^2 - 5x - 30$$

$$\underline{x^2(x+6)} - \underline{5(x+6)} = (x+6)(x^2-5)$$

$$x^3 + 6x^2 = x^2(x+6)$$

$$-5x - 30 = -5(x+6)$$

(15)  $2x^3(4x^3 - 2x^2 + x + 3)$   
 p. 445  $8x^6 \dots\dots$

HOME  
 p. 445 14, 20, 22  
 p. 446 36, 44,  
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(19)  $(x+3)(2x^3 + 3x^2 + 1) =$

(25)\*  $(x-2)(2x+3)(3-x)$

(35)  $x^3 + 6x^2 + 8x = x(x^2 + 6x + 8) = x( \quad )( \quad )$

(37)  $x^3 + 2x^2 - 3x$

(47)  $\underline{1-x} + \underline{x^2 - x^3}$

(45)  $\underline{x^3 - 2x^2 - 5x + 10}$

$$\textcircled{15} \quad 2x^3(4x^3 - 2x^2 + x + 3) =$$

$$= 8x^6 - 4x^5 + 2x^4 + 6x^3$$

$$\textcircled{19} \quad (x+3)(2x^3 + 3x^2 + 1)$$

$$2x^4 + \underline{3x^3} + x + \underline{6x^3} + 9x^2 + 3$$

$$2x^4 + 9x^3 + 9x^2 + x + 3$$

$$\textcircled{25} \quad (x-2)(2x+3) = 2x^2 + 3x - 4x - 6 =$$

$$= (2x^2 - x - 6)(3 - x) \dots$$

$$\begin{aligned} (35) \quad x^3 + 6x^2 + 8x &= x(x^2 + 6x + 8) = \\ &= x(x+2)(x+4) \end{aligned}$$

$$\begin{aligned} (37) \quad x^3 + 2x^2 - 3x &= x(x^2 + 2x - 3) = \\ &= x(x-1)(x+3) \end{aligned}$$

$$3(-1) = -3$$

$$3 + -1 = 2$$

$$(45) \quad \underline{x^3 - 2x^2} - \underline{5x + 10} = x^2(\underline{x-2}) - 5(\underline{x-2}) = \\ = (x-2)(x^2-5)$$

$$(47) \quad \underline{1-x} + \underline{x^2-x^3} = 1(1-x) + x^2(1-x) = \\ = (1+x^2)(1-x)$$